

## NOTES ON SOME PACIFIC ISLAND TRYPETINAE AND TEPHRITINAE (DIPTERA: TEPHRITIDAE)

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### Abstract

Taxonomic notes, distribution and host records are provided for 19 species of Trypetinae and Tephritinae from the Western and Southern Pacific. *Elleipsa quadrifasciata* Hardy, *Euphranta lemniscata* (Enderlein) and *Tetreuaresta obscuriventris* (Loew) in Tonga, and *Dioxyna brachybasis* Hardy in Fiji are new distribution records. *Ornithoschema pacifica* nom. nov. is proposed as a replacement name for *Cycasia oculata* Malloch, a junior secondary homonym of *O. oculatum* de Meijere. *Myoleja shirakii* Hardy is placed as a new synonym of *Philophylla quadrata* (Malloch), comb. nov. First host records are provided for *Coelotrypes punctilabris* (Bezzi), comb. nov., *Euphranta lemniscata* and *Sphaeniscus binoculatus* (Bezzi), whilst published reports of *E. lemniscata* and *Philophylla nigroscutellata* (Hering), comb. nov. from papaya are considered erroneous. *Fusculudia mesopleuralis* (Malloch), *Philophylla bifida* (Bezzi), *P. curvinervis* (Bezzi) and *P. taylori* (Malloch) are also new combinations.

### Introduction

Non-dacine Tephritidae from the Pacific have received little attention due to their largely non-economic status but much remains to be learned about their biologies and distribution. In an attempt to stimulate interest in this field, we provide information on 19 species, including the 12 species of Trypetinae and 5 of the 13 species of Tephritinae recorded from Islands of the Western and Southern Pacific excluding the Solomons (Hardy & Foote 1989).

Bezzi (1928) recorded 9 species from Fiji, describing 7 as new. Curran (1929) described *Dioxyna conflicta* (Curran) from New Caledonia, whilst Malloch (1931, 1938, 1939c, 1942) recorded 8 species from Samoa, French Polynesia, Fiji and Guam, describing 6 as new. Hardy and Adachi (1956) recorded 10 species from Micronesia, 2 (since synonymized) described as new. Hardy (1988) later added *Dioxyna brachybasis* Hardy to the South Pacific fauna.

Some of the specimens studied here were collected during project work supported by the Australian Centre for International Agricultural Research (ACIAR) and the Regional Project on Fruit Fly Control Strategies in the South Pacific. This has added to the South Pacific fauna *Elleipsa quadrifasciata* Hardy, previously known only from the Philippines and Singapore. We are also able to confirm establishment of the introduced weed-control agent *Tetreuaresta obscuriventris* (Loew) in both Fiji and Tonga.

Specimen depositories are abbreviated as follows: USP - University of the South Pacific, Suva; QDPI - Queensland Department of Primary Industries, Brisbane.

Family TEPHRITIDAE  
 Subfamily TRYPETINAE  
 Tribe ACANTHONEVRINI  
*Dirioxa pornia* (Walker)

*Trypeta pornia* Walker, 1849: 1039.

*Trypeta musae* Froggatt, 1899: 501.

Material examined. NEW CALEDONIA: 2 ♂♂, 4 ♀♀, 3.ii.1953, from rotting fruit [in QDPI].

Remarks. This is reported as a widespread species in the South Pacific but its establishment on several islands requires confirmation. It is sometimes regarded as a pest but generally attacks already damaged or rotting fruit.

*Enicopterina bivittata* Malloch

*Enicopterina bivittata* Malloch, 1939c: 241.

Known only from Fiji, the biology of this endemic species and genus is unrecorded.

*Parachlaena greenwoodi* (Bezzi) (Fig. 1)

*Rhacochlaena greenwoodi* Bezzi, 1928: 110.

Material examined. FIJI: 1 ♂, 1 ♀, Suva, 13.xii.1980 and 16.x.1990, R.A. Beaver; 2 ♂♂, 3 ♀♀, Savura Creek, Suva, 9.v.-10.xii.1981, R.A. Beaver; 1 ♂, 1 ♀, Suva, 2-4.xii.1992, D.L. Hancock. [In USP and QDPI].

Remarks. Known only from Fiji, this endemic species and genus was referred to the Gastrozonina by Hering (1944) and Hardy & Foote (1989) but appears better placed in the Acanthonevrini. Bezzi (1928) noted only a single superior orbital bristle on the head but a second, very weak upper bristle is also present. There are normally 4 scutellar bristles, the apicals shorter than the basals, but one specimen examined has 5, the extra bristle as long as the apicals. The aculeus is typically acanthonevrine, being apically rounded and with long preapical setae.

Tribe EUPHRANTINI

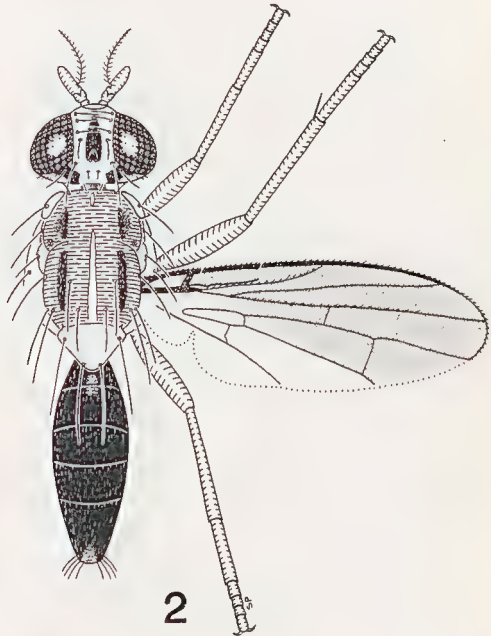
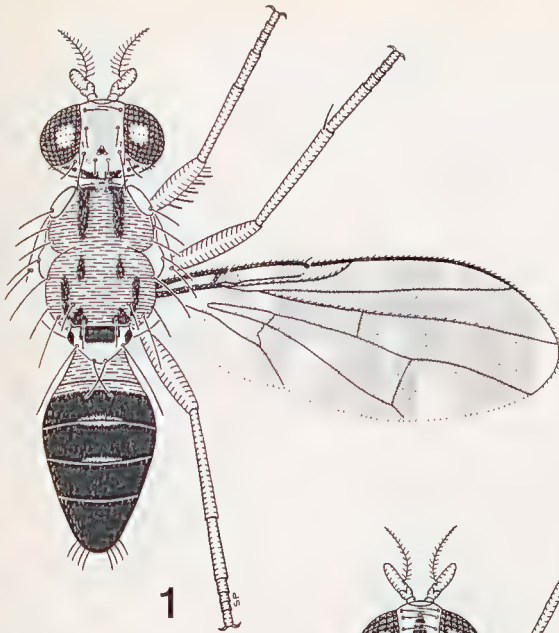
*Coelotrypes punctilabris* (Bezzi), comb. nov. (Fig. 2)

*Ocneros punctilabris* Bezzi, 1928: 107.

*Euphranta punctilabris* (Bezzi); Hardy & Foote, 1989: 521.

Material examined. FIJI: 1 ♂, Natova, 1914, R. Veitch; 1 ♀, Suva, 18.viii.1986, R.A. Beaver; 1 ♂, Suva, 2-4.xii.1992, D.L. Hancock. TONGA: 5 ♂♂, 1 ♀, Tongatapu Is., 15.viii.1972, J.A. Litsinger. [In USP & QDPI].

Remarks. This species is known from Fiji, Tonga and Western Samoa. Tongan specimens were bred from a Convolvulaceae vine (new record), possibly the flower buds but actual larval site not recorded. Related species



Figs 1-2. 1, *Parachlaena greenwoodi*, ♂; 2, *Coelotrypes punctilabris*, ♂

breed in the buds of *Ipomoea* spp. This is one of a small group of Oriental and Pacific species more closely allied to Afrotropical species of *Coelotrypes* Bezzi than to *Euphranta* Loew, to which they have been referred previously.

*Elleipsa quadrifasciata* Hardy (Fig. 3)

*Elleipsa quadrifasciata* Hardy, 1970: 90.

Material examined. TONGA: 4 ♂♂, 4 ♀♀, Tongatapu Is., 7.xii.1974, W.H. Pierce; 72 ♂♀, Havelutotu, Tongatapu, 30.iv.1992, Pulotu, bred from Feta'anu; 1 ♂, 1 ♀, Tofoa, Tongatapu, 13.v.1992, Pulotu, bred from Feta'anu; 4 ♂♀, Ohonua, 'Eua, 31.iii.1992, Ponciano, bred from Feta'anu; 5 ♂♀, Faleloa, Ha'apai, 30.vi.1992, Suitoni, bred from Feta'anu. [In QDPI].

Remarks. This species is known from Balabac Is (Philippines), Singapore and Tonga (new record). It breeds in the fruit of *Excoecaria agallocha* (Euphorbiaceae) in Singapore (Lee 1991) and Tonga (above records).

*Euphranta lemniscata* (Enderlein) (Fig. 4)

*Trypeta lemniscata* Enderlein, 1911: 426.

*Euphranta rivulosa* Bezzi, 1928: 109.

Material examined. TONGA: 1 ♀, Ha'akio, Vava'u, 21.x.1991, Pulotu, bred from Pula (vine) [in QDPI].

This widespread Oriental species is recorded from the Northern Marianas, Fiji and Tonga (new record) in the Pacific. On Saipan it was reportedly bred from papaya ("*ex Carica papaya*") (Hardy & Adachi 1956) but this has not been repeated and is certainly an error. The Tongan specimen was bred from the fruit of *Stictocardia tiliifolia* (Convolvulaceae) (new record).

Tribe RIVELLIOMIMINI

Genus *Ornithoschema* de Meijere

*Ornithoschema* de Meijere, 1914: 221. Type-species *O. oculatum* de Meijere.

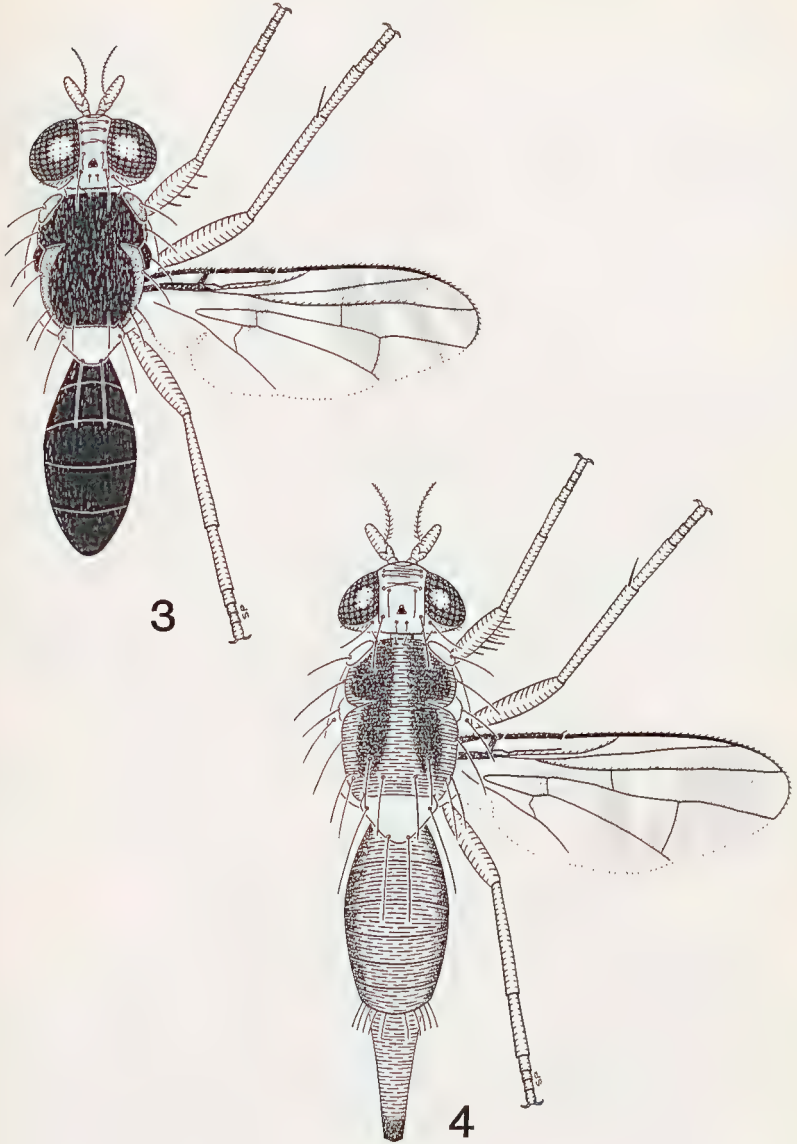
*Cycasia* Malloch, 1942: 202. Type-species *C. oculata* Malloch.

The above genera were synonymized by Hancock (1991). As a result the type-species are homonyms and a replacement name is proposed below for *O. oculatum* (Malloch).

*Ornithoschema oculatum* de Meijere

*Ornithoschema oculatum* de Meijere, 1914: 221.

This species is known from Indonesia to the Bismarck and Solomon Islands. It is very similar to *O. flavum* (Hardy) from Thailand, but the female appears to have an additional abdominal segment, the apparent 6th segment being equivalent to the 5th of the other 2 species. The true 6th tergite is vestigial and not visible from above, as in the other species in this tribe.



Figs 3-4. 3, *Elleipsa quadrifasciata*, ♂; 4, *Euphranta lemniscata*, ♀

*Ornithoschema pacifica* nom. nov.*Cycasia oculata* Malloch, 1942: 203.*Ornithoschema oculatum* (Malloch); Hancock, 1991; nec *O. oculatum* de Meijere.

This species is known only from Guam, supposedly bred from *Cycas* but this requires confirmation. The original data labels state "ex *Cycas*", without definite indication the specimens were reared; they may have been collected on *Cycas*. The new name *pacifica* is treated as a noun in apposition.

## Tribe TRYPETINI

Han (1992) has shown that most species previously referred to *Myoleja* Rondani do not belong there. His provisional arrangement is followed here. All but one (*P. quadrata* (Malloch)) of the new combinations noted here were first recognized by Han (1992).

*Fusculudia mesopleuralis* (Malloch), comb. nov.*Pseudospheniscus mesopleuralis* Malloch, 1939c: 242.*Myoleja mesopleuralis* (Malloch); Hardy & Foote, 1989: 524.

Known only from Fiji, this species appears to be related to *F. disjuncta* (Hardy) from Vietnam, *F. bicuneata* (Hardy) and *F. unicuneata* (Hardy) from Papua New Guinea. Nothing is known of the biology of these species but they show some resemblance to species of *Hoplاندromyia* Bezzi and may be leaf-miners. They were referred to *Fusculudia* Ito by Han (1992).

*Philophylla bifida* (Bezzi), comb. nov.*Pseudospheniscus bifidus* Bezzi, 1928: 112.*Myoleja bifida* (Bezzi); Hardy & Foote, 1989: 524.

Known only from Fiji, the affinities and biology of this species are unknown.

*Philophylla curvinervis* (Bezzi), comb. nov.*Pseudospheniscus curvinervis* Bezzi, 1928: 114.*Myoleja curvinervis* (Bezzi); Hardy, 1987: 335.*Anomoia curvinervis* (Bezzi); Hardy & Foote, 1989: 523.

Recorded only from Fiji, this species was referred to *Anomoia* Walker (= *Phagocarpus* Rondani) by Malloch (1939a, c) and Hardy & Foote (1989) or *Myoleja* by Hardy (1987) but appears better placed in *Philophylla* Rondani, as was done by Han (1992), under the present concept of these genera. Its biology is unknown but the related *P. quadrata* (Malloch) (= *shirakii* Hardy, see below) has been collected on *Premna* (Verbenaceae) (Malloch 1939a) and fruit of this genus may be the host.

*Philophylla nigroscutellata* (Hering), comb. nov.*Neanomoea nigroscutellata* Hering, 1939: 18.*Hendelina bisecta* Hardy & Adachi, 1956: 17.*Myoleja nigroscutellata* (Hering); Hardy & Foote, 1989: 524.

Recorded from Myanmar (formerly Burma) to the Southern Mariana Is. On Saipan it was reportedly bred from papaya ("ex *Carica papaya*") (Hardy & Adachi 1956) but, as in the case of *Euphranta lemniscata* noted above, this is certainly an error. Both species were possibly collected on papaya, rather than bred from it. The form of the ovipositor (Hardy & Adachi 1956) and wing pattern suggests that this may be a leaf petiole-mining species.

*Philophylla quadrata* (Malloch), comb. nov.*Anomoia quadrata* Malloch, 1939a: 275.*Myoleja shirakii* Hardy, 1987: 335, syn. nov.

We are unable to detect any differences between *A. quadrata* Malloch and *M. shirakii* Hardy and consider them to be synonyms. Both were described from the Solomon Islands. As in the case of *P. curvinervis* (Bezzi), this species appears better placed in *Philophylla* than *Anomoia* or *Myoleja*, under the present concept of these genera. Malloch (1939a) recorded it on *Premna obtusifolia* (Verbenaceae) and fruit of this is likely to be a host.

*Philophylla taylori* (Malloch), comb. nov.*Pseudospheniscus taylori* Malloch, 1939b: 450.*Hendelina parva* Hardy & Adachi, 1956: 18.*Myoleja taylori* (Malloch); Hardy & Foote, 1989: 525.

Recorded from Indonesia (Irian Jaya) to the Solomon Islands and Micronesia (Caroline Islands: Merir I.). The biologies of this and related species are unknown.

## Subfamily TEPHRITINAE

## Tribe TEPHRELLINI (= ACIURINI)

*Sphaeniscus binoculatus* (Bezzi)*Spheniscomyia binoculata* Bezzi, 1928: 115.

Material examined. FIJI: 1 ♂, Cuvu, 10.x.1919, W. Greenwood; 1 ♂, Lautoka, 20.ii.1930, W. Greenwood, ex flowers of *Coleus blumei*. [In USP].

Remarks. This species is very similar to *S. atilius* (Walker) and has been recorded only from Fiji. It has been bred from the flowers of *Coleus blumei* (Labiatae) (new record).

## Tribe TEPHRITINI

*Dioxyna brachybasis* Hardy*Dioxyna brachybasis* Hardy, 1988: 21.

Material examined. FIJI: 1 ♂, Suva, 13.xii.1988, R.A. Beaver. [In USP].

Remarks. Hardy (1988) recorded specimens referred to this species from Austral, Niue and Cook Is. The above specimen from Fiji (new record) also fits here; cell 2nd M2 is almost completely hyaline. Elsewhere it occurs in Papua New Guinea.

*Dioxya sororcula* (Wiedemann)

*Trypeta sororcula* Wiedemann, 1830: 509.

Material examined. FIJI: 2 ♀♀, Lautoka, 21. & 25.x.1920, W. Greenwood, ex *Cosmos caudatus*; 1 ♀, Suva, 2-4.xii.1992, D.L. Hancock. [In USP & QDPI].

Remarks. This species is widespread in the Pacific. It has been bred from the flowers of *Cosmos caudatus* (Compositae) in Fiji.

*Spathulina acroleuca* (Schiner)

*Tephritis acroleuca* Schiner, 1868: 268.

*Oxya parca* Bezzi, 1913: 159.

Material examined. FIJI: 1 ♀, Cuvu, 12.vi.1915, R. Veitch; 1 ♀, Lautoka, 16.v.1919, W. Greenwood; 1 ♀, Lautoka, mts, 4.iv.1920, W. Greenwood; 3♂♂, 5♀♀, Suva, 22.x. & 13.xii.1988 & 27.iii.1991, R.A. Beaver; 5♂♂, 2♀♀, Sigatoka Valley, 24.iv.1991, E. Hamacek; 1♂, Suva, 2-4.xii.1992, D.L. Hancock. WESTERN SAMOA: 2 ♀, airstrip, Savai'i, v.1991, A. Allwood & R.A.I. Drew, on Compositae. [In USP & QDPI].

This species is widespread in the Pacific. It breeds in the flowers of Compositae.

*Tetreuaresta obscuriventris* (Loew)

*Trypeta obscuriventris* Loew, 1873: 313.

Material examined. FIJI: 1 ♂, 3 ♀♀, Savura Creek, Suva, 11-17.vi. & 4-10.vii.1981 & 7-14.v.1983, R.A. Beaver; 1 ♂, 2 ♀♀, Sigatoka Valley, 24.iv.1991, E. Hamacek. TONGA: 6 ♂♂, 3 ♀♀, Vava'u, v.1991, R.A.I. Drew, on Compositae. [In USP & QDPI].

Remarks. This New World species was introduced to Fiji and is now established. It has spread to Tonga (new record). It breeds in the flowers of *Elephantopus mollis* (Compositae), a noxious weed. It has also been introduced to Hawaii.

### Acknowledgements

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